

The Interconnection Between Social Support and Emotional Distress Among Individuals with Chronic Pain: A Narrative Review

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Abstract: Chronic pain is a public health concern affecting over 100 million U.S. adults. Because chronic pain is multifactorial, it requires a biopsychosocial approach to understand how biological, psychological, and social factors contribute to both the development and maintenance of pain. On average, individuals with chronic pain report higher levels of emotional distress compared to pain-free individuals. Research has demonstrated that social support is associated with better pain outcomes and less emotional distress. It has been proposed that social support may improve pain outcomes by reducing the influence of stressors. However, the majority of research exploring the relationships between social support and pain-related outcomes has focused on the direct relationship between these variables, largely overlooking the process by which social support has a positive influence on pain. This narrative review synthesizes research on how chronic pain, emotional distress, and social support are highly interconnected, yet research investigating chronic pain and emotional distress within a social context is limited. We then highlight disparities in chronic pain, such that the burden of chronic pain is unequal between demographic groups. Next, we discuss existing evidence for the use of group-based interventions to address pain-related outcomes. Lastly, we summarize limitations of prior research studies and highlight gaps in the current literature. Overall, longitudinal research comprehensively investigating the distinct nuances in the measurement of social support and how these nuances relate to emotional distress and pain outcomes is needed and may provide insight into the unique needs of individuals or subgroups. Further, demographically diverse randomized controlled trials are needed to identify the process by which group-based interventions improve pain outcomes and whether these interventions are more effective for particular groups in order to personalize treatment approaches and address inequities in pain care.

Keywords: chronic pain, social support, emotional distress, depression, anxiety, group-based interventions

Introduction

Chronic pain, defined as persistent pain for at least 3 months,¹ is a public health concern affecting over 100 million U.S. adults.²⁻⁴ Common chronic pain conditions include low back pain, fibromyalgia, migraine, temporomandibular disorders (TMD), and chronic postsurgical pain. Among US adults, new cases of chronic pain are more prevalent than other conditions and diseases, such as diabetes and hypertension.⁵ Pain is one of the most common causes for seeking medical care,⁶ resulting in a large burden on the healthcare system. Importantly, chronic pain is a leading cause of physical disability and reduced quality of life.⁷ Because chronic pain is multifactorial, it requires a biopsychosocial approach to understand how biological, psychological, and social factors contribute to both the development and maintenance of pain.⁸ Although pain is an experience that often occurs in the presence of others, less research has focused on chronic pain within a social context, particularly investigating the role of social support.⁹

There is not consensus in the scholarly literature on the definition or conceptualization of the term social support. For example, social support can refer to both received and perceived support from family, friends, or significant others.¹⁰ Additionally, support can be measured based on different components, such as the type of support (eg, emotional,

tangible, informational) or size of one's social network (eg, number of close members).¹⁰ While some use the terms social support and loneliness interchangeably, social support is distinct from the construct of loneliness, which is an emotional state that often stems from the perception that one's social needs are not being met by one's social network.¹¹ For the purpose of this narrative review, and given the limited scholarly literature on the complexities of social support in relation to chronic pain, we use the term social support broadly.

The stress-buffering model suggests that social support positively influences health outcomes by protecting individuals from the harmful effects of stress.¹² Several studies have demonstrated that social support is associated with less pain severity and pain-related disability among individuals with chronic pain.^{13–15} It has been proposed that social support may be associated with less pain by reducing the influence of stressors or modulating an individual's ability to cope.¹⁶ However, the majority of research exploring the relationship between social support and pain-related outcomes among individuals with chronic pain has focused on the direct relationship between these variables, largely overlooking the process by which social support has a positive influence on pain.¹⁷

On average, individuals with chronic pain report higher levels of emotional distress, including anxiety and depression, compared to pain-free individuals.^{18–20} Several review articles have highlighted the increased prevalence of emotional distress among individuals with chronic pain and emphasized how it impacts both the development and maintenance of pain symptoms across a variety of pain conditions (eg, low back pain, multiple sclerosis, TMD).^{9,15,21,22} While some review articles have also discussed the relations of various social factors (eg, loneliness, dissatisfaction with co-workers, social support) with pain outcomes,^{15,22} an understanding of how social support exerts its beneficial effects on chronic pain remains understudied. The biopsychosocial model of pain acknowledges how psychological and social factors independently and interactively impact pain outcomes.⁸ As social support has shown to have a positive impact on emotional distress, it may be particularly important to understand the influence of social support on pain while also considering its impact on emotional distress.

The purpose of this narrative review is to discuss how social support, emotional distress, and pain are highly interconnected, and thus, should be considered in conjunction with one another. A comprehensive approach for understanding emotional distress within a social context may provide further insights into prevention and intervention strategies among individuals with chronic pain. Additionally, we highlight important disparities in chronic pain, such that the burden of chronic pain is unequal between demographic groups, which may be important to consider in relation to emotional distress and social support. We also discuss existing evidence for the use of group-based interventions to address pain-related symptoms. Lastly, we summarize limitations of prior research studies and highlight gaps in the current literature.

Emotional Distress and Social Support Among Individuals with Chronic Pain

A well-studied psychological risk factor for chronic pain is emotional distress, which is often assessed based on an individual's level of depression or anxiety.¹⁵ The severity of depression and anxiety symptoms can range from mild to severe and research has shown a large degree of variability across individuals. Depression often involves feelings of sadness, hopelessness, and helplessness.²³ These negative feelings can influence an individual's thoughts about their chronic pain. For example, an individual with high levels of depression may feel as though there is nothing that they can do to ever make their pain go away. Anxiety often involves feelings of worry or recurring negative thought patterns.²⁴ An individual with high levels of anxiety may ruminate on thoughts related to their pain and worry about whether their pain will ever end. As individuals with chronic pain report higher levels of emotional distress than pain-free individuals, these negative thoughts about their pain and ability to cope with pain may exacerbate their symptoms, putting these individuals at risk of worse outcomes.

Although chronic pain can contribute to emotional distress, several prospective, longitudinal studies have shown that emotional distress may precede and be a risk factor for the development of several common chronic pain conditions, including low back pain, TMD, and chronic postsurgical pain.^{25–28} For example, among individuals with no history of chronic pain at baseline, depression predicted the development of moderate to severe chronic pain four years later.²⁹

Preoperative (ie, baseline) depression and anxiety have also been shown to predict the development of chronic postsurgical pain after several types of common surgeries.^{30,31} Additionally, emotional distress has shown to predict the worsening of pain symptoms among individuals already experiencing acute or chronic pain. For example, several studies have shown that both general emotional distress and pain-specific distress (ie, ruminating on and feeling helpless in response to one's pain) predicted worsened pain severity and pain-related disability over time among individuals with several chronic pain conditions, including fibromyalgia and low back pain.^{32–34}

Within the general population, a large body of literature has consistently shown that social support is associated with less depression and anxiety,³⁵ and longitudinally predicts reduced levels of emotional distress.³⁶ Among individuals with chronic pain, several cross-sectional studies have shown that social support is associated with less depression, anxiety, and pain-related distress.^{14,37–43} Interestingly, one cross-sectional study found that greater social connectedness was related to lower anxiety, and, in turn, less pain.⁴⁴ Although social support and social connectedness are distinct constructs, such that social connectedness measures an individual's sense of belonging (eg, comfortability in the presence of strangers; ability to connect with other people),⁴⁵ it is plausible that social support may be related to less emotional distress, and, in turn, better pain outcomes. However, limited research has investigated the longitudinal relationship between social support and emotional distress among individuals with chronic pain. While there is some evidence that social support may longitudinally predict less depression and anxiety over time among individuals with chronic pain,^{46,47} establishing a prospective link between social support and emotional distress could offer valuable insights into a process by which social support confers protective benefits in the context of pain. If emotional distress contributes to the relationship between social support and better pain outcomes, then an intervention designed to enhance one's social support while simultaneously equipping individuals with coping strategies to better manage negative emotions may prove to be particularly beneficial in improving pain.

Demographic Considerations

Although chronic pain affects individuals from all backgrounds, research has shown that the burden of chronic pain is disproportionately experienced by members of vulnerable groups. Therefore, it is important to consider how gender, race/ethnicity, and age relate to chronic pain, emotional distress, and social support.

Gender

The prevalence of common chronic pain conditions is disproportionately higher for women than men, including fibromyalgia, migraine, TMD, and osteoarthritis.^{48–50} Additionally, women report more frequent daily pain, pain in more body areas (eg, widespread pain), and higher levels of clinical pain intensity than men.⁵¹ Given the documented gender differences in the prevalence and experience of chronic pain, it is necessary to consider gender differences in emotional distress and social support that may importantly influence the pain experience.

Women with chronic pain typically report higher levels of depression and anxiety than men.^{52,53} Additionally, women report greater emotional distress specifically related to the experience of pain, such as pain-related anxiety and negative ruminative and helpless thoughts about pain.^{51,54,55} On average, women also perceive more social support to be available if needed,⁵⁶ report more frequent contact with their social connections,⁵⁷ have larger social networks, and report more satisfaction with their social networks than men.⁵⁸ However, much of the work on gender differences in social support has been conducted among the general population. While some studies showed that women with chronic pain used social support as a coping strategy more often and perceived more support to be available from friends than men,^{47,59} less work has explored gender differences in social support specifically among individuals with chronic pain.

Collectively, these considerations highlight the notable gap in the literature investigating gender differences in social support among individuals with chronic pain and suggest that elucidating these differences may help identify individuals most at-risk for poor pain outcomes, thus allowing for the tailoring of interventions. For example, if men with chronic pain typically report less social support than women, then it may be helpful to tailor interventions for men that incorporate building interpersonal relationships while learning skills to manage pain. Future studies should aim to understand how gender differences in emotional distress may affect chronic pain within a social context.

Race/Ethnicity

An accumulating body of research has demonstrated racial/ethnic disparities in chronic pain, such that underrepresented racial/ethnic groups tend to report more severe clinical pain.^{60–62} For example, a recent study showed that non-Hispanic Black and Hispanic individuals reported higher pain intensity and pain-related disability than White individuals.⁶³ Similarly, a meta-analysis found that, on average, Black individuals with chronic pain reported higher pain intensity compared to White individuals.⁶⁴ While studies focused on racial/ethnic differences in pain have primarily compared White and Black individuals, recent research suggests that Native Americans may experience a higher prevalence of chronic pain than other racial/ethnic groups in the U.S.,^{65,66} further highlighting the need for diverse research studies. Notably, several studies have shown that racial/ethnic disparities are present even while accounting for potential confounders, such as demographic factors (socioeconomic status, education, employment) and other health and medical comorbidities.⁶⁰ Thus, it is important to consider how racial/ethnic differences in pain may be related to emotional distress and social support.

Research suggests that racial/ethnic differences may exist in emotions linked to the pain experience, such as depression and anxiety. For example, Black individuals with chronic pain tend to report higher levels of anxiety,⁶⁷ depression, and greater helplessness related to their pain compared to White individuals.^{68–70} Likewise, a recent study showed that Black and Hispanic individuals with chronic pain reported more symptoms of depression and anxiety than White individuals.⁷¹ A meta-analysis also showed that Black individuals engaged in more pain-related rumination and helpless thinking compared to White individuals.⁷² Importantly, less research has focused on potential racial/ethnic differences in social support among individuals with chronic pain. One study found that Black individuals with chronic pain reported less social support than White individuals,⁷³ whereas another study found no evidence of racial differences in social support.⁷⁴ Given the scarcity of research on racial/ethnic differences in social support among individuals with chronic pain, it is critical that future studies address this gap. More inclusive research that goes beyond comparing just White and Black individuals is also needed and may provide insight into the implementation of personalized intervention strategies.

Age

Chronic pain is highly prevalent among older adults (≥ 65 years). Approximately 38–50% of community-dwelling older adults report chronic pain,^{75,76} and research suggests that the prevalence of chronic pain increases with chronological age.^{77,78} As life expectancy and the population age continue to rise,⁷⁹ the number of people over the age of 65 living with chronic pain is expected to increase. Therefore, it is important to consider age-related differences in emotional distress and social support that may influence the experience of pain.

According to the socioemotional selectivity theory, there is a systematic shift in time perspective as people age, which results in a change in motivational goals, emotional well-being, and social relationships.^{80,81} In early adulthood, people perceive the future as expansive, tend to focus on longer-term goals, and are motivated to acquire knowledge and information. Later in life, however, people view the future as more limited due to an awareness of their own mortality and shift their focus towards shorter-term goals. As a result, older adults tend to focus on the present moment and are motivated to maximize positive experiences and avoid negative experiences.

Several studies have shown that older adults report lower levels of depression and anxiety compared to younger adults,^{82–84} which is known as the “well-being paradox” of aging. Interestingly, research has also shown that older adults report daily stressful hassles as less unpleasant and report less intrusive thoughts and emotional distress in response to these stressors compared to younger adults.^{85,86} In addition to age-related changes in emotional well-being, research suggests that social relationships change across adulthood. During early adulthood, people tend to explore new social relationships and have larger social networks, as this is a form of knowledge acquisition. In contrast, as people age, they “prune” unrewarding social relationships and focus on maintaining relationships they perceive as emotionally meaningful, favoring quality over quantity. Indeed, research has found that the number of peripheral social connections decreases across adulthood, resulting in a smaller social network, while the number of close social connections remains

stable.^{87,88} Although having a small network size may be related to loneliness, it is the intimacy and importance of relationships that is most critical in older age.⁸⁴

Notably, the socioemotional selectivity theory has not yet been applied to individuals living with chronic pain, a subgroup that may face more daily stressors and challenges performing everyday activities. Thus, it remains largely unclear how living with chronic pain may influence time perspective, whether the “well-being paradox” applies to this subgroup of older adults, and what impact the possible shift in social relationships has on their lives. Potentially, older adults living with chronic pain may face unique daily challenges that contribute to high levels of emotional distress and the benefits of a smaller, closer social network may not generalize to this subgroup of adults. Yet, one study on patients with chronic low back pain demonstrated that older age was associated with lower levels of depression and anxiety.⁸⁹ Future studies should aim to critically examine whether the socioemotional selectivity theory applies to older adults living with chronic pain to understand its potential generalizability and subsequently inform treatment approaches. Investigating whether the socioemotional selectivity theory extends to this subgroup of older adults is an important area for future research as the number of older adults with chronic pain continues to grow.

Clinical Implications

A substantial body of evidence suggests that increased social support can facilitate recovery and adaptation to chronic pain, leading to better outcomes.¹³ Thus, interventions targeting social support have garnered increased attention. One of the most common ways in which social support is integrated into the treatment of chronic pain is by utilizing a group-based modality. Group-based interventions create a sense of community and belonging among participants by providing a supportive environment where individuals with similar chronic conditions can connect to share their challenges and successes, while also learning from those around them.¹⁰ These interventions can help individuals feel as though they are better able to manage their chronic pain, while providing them with the tools to evaluate and cope with stressors more effectively, and thus, engage in more adaptive behaviors.⁹⁰

In general, studies assessing the efficacy of group-based interventions for chronic pain have shown promising results. For example, a meta-analysis found that group-based cognitive behavioral therapy (CBT) resulted in greater improvements in pain, depression, and physical functioning compared to control groups.⁹¹ Another meta-analysis found that psychological interventions that used cognitive behavioral techniques (eg, cognitive restructuring, cognitive coping skills) led to reductions in pain and emotional distress, and that the use of group-based interventions resulted in greater improvements compared to individually delivered approaches.⁹² Online interventions have also become increasingly popular as they can often address barriers of in-person treatments by offering a relatively accessible and convenient means of accessing tools. However, online interventions are often individualized, and thus, they overlook the importance of addressing pain within a social context. Some research has shown that online group-based CBT and acceptance and commitment therapy improved pain, pain-related disability, anxiety, and pain-specific rumination and helplessness.^{93,94} Additionally, a recent systematic review found that online group-based teletherapy (eg, CBT, mindfulness) reduced pain, emotional distress, pain-specific negative thoughts, and physical disability among individuals with chronic pain.⁹⁵ Importantly, this review identified a large gap within the literature, such that there are few rigorous randomized controlled trials (RCTs) investigating the efficacy of group-based online interventions among individuals with chronic pain, which is an important area for future studies.

Researchers have also begun to explore the role of support groups on social media platforms, which are accessible in a variety of formats and allow individuals to connect more flexibly. For example, research has found that both peer-led and professionally-guided Facebook groups for chronic pain effectively reduced pain, pain-related disability, and depression, while also increasing social support.^{96,97} Notably, these studies provide evidence that support programs that do not involve components from psychological interventions are also effective at positively impacting pain and emotional distress. Interestingly, one study also examined the Facebook posts that participants made within these groups and found that individuals with chronic pain tended to refer to people with chronic pain as “us” and individuals without chronic pain as “them.” For example, participants discussed how they often isolate themselves from family and friends because they feel judged and misunderstood by “them.”⁹⁶ Receiving validation in these social media groups from others who also suffer from chronic pain may potentially reduce emotional distress,⁹⁸ resulting in improved pain.

In line with this, one factor that has been shown to impede treatment effectiveness in patients with chronic pain is stigma. Pain is a subjective experience and several chronic pain conditions lack clear medical pathology or are non-specific (eg, fibromyalgia, low back pain).^{99,100} As such, individuals with chronic pain often report feeling as though their friends, family, or health care providers do not believe them, and sometimes even blame or dismiss them, which can result in feelings of invalidation.¹⁰¹ These feelings of invalidation, stemming from the stigma associated with chronic pain, have been shown to impede help-seeking behavior and diminish the efficacy of treatments.¹⁰² Therefore, while group-based interventions and those delivered via online platforms have shown promising results, it is important to assess barriers imposed by stigma associated with chronic pain.

Additionally, chronic pain-related stigma intersects with stigmas related to other individual characteristics, and research has shown that gender- and race-related disparities exist within pain management and treatment. Both gender- and race-related stigmas shape how others perceive individuals with chronic pain and their experiences of pain, subsequently affecting how they are treated in a clinical setting. For example, studies have shown that health care providers tend to provide women with less adequate pain care compared to men.¹⁰³ Specifically, women are perceived as more pain sensitive than men, with the source of their pain often attributed to psychological rather than somatic factors, and they are prescribed less pain medication on average.^{104,105} Similarly, research has shown that health care providers tend to underestimate pain in Black patients compared to White patients.¹⁰⁶ Further, compared to White patients with chronic pain, racial/ethnic minorities are less likely to be prescribed opioids to help manage pain, with the strongest evidence for Black patients.¹⁰⁷ Thus, research suggests that chronic pain may be more stigmatized among women and racial/ethnic minorities,¹⁰⁸ underscoring the importance of considering these factors when treating patients with chronic pain.

Considerations for Future Research

Social support is a complex construct and few studies have investigated how nuances in its conceptualization may relate to emotional distress or pain among individuals with chronic pain. One longitudinal study of patients with chronic low back pain examined whether subtypes of support (ie, affectionate, informational, and tangible support; positive social interactions) differentially predicted reductions in depression over time.⁴⁶ Interestingly, they found that tangible and informational support were more consistently associated with recovery from depression and less depressive symptoms over time compared to affectionate support and positive social interactions. These findings provide initial evidence that different aspects of social support may be important for understanding emotional distress among individuals with chronic pain. Future studies should incorporate multidimensional measures that capture these nuances to better understand the relationship of social support with emotional distress and pain. Investigating distinct aspects of social support across chronic pain conditions (eg, TMD, fibromyalgia) may also provide insight into the unique needs of subgroups of individuals based on their condition-specific symptoms. Identifying which aspects of support are most beneficial, and for whom, will help inform intervention targets.

Although there is growing evidence for the efficacy of group-based interventions for chronic pain, the majority of these studies have been demographically skewed. Most of these studies have largely focused on women and White patients. One major limitation across these studies is that many do not report the racial/ethnic breakdown of their entire sample, but rather only report on the percentage that was White, with some studies not reporting any racial/ethnic information on their sample. Thus, it remains largely unknown what racial/ethnic groups have been included in these studies. As a result, it is unclear how the efficacy of these interventions may generalize to other groups of individuals, or whether these interventions are more effective for particular groups. Because evidence from RCTs is often used to inform clinical practice procedures and policies, it is critical to include diverse participants in research to expand on the generalizability of findings, increase real-world applications, and address inequities in pain care.¹⁰⁹

Additionally, while research has shown that several forms of group-based interventions are effective at improving pain outcomes among individuals with chronic pain, the process by which these interventions improve pain remains largely understudied. As many of these interventions have also shown to effectively reduce depression, anxiety, and pain-specific negative thoughts, it is plausible that reductions in emotional distress contribute to improvements in pain. It is critical that future RCTs investigate and identify the causal process that explains the efficacy of these interventions. This information can be used to further inform the development and refinement of intervention strategies. In addition to

Box 1 Key Findings

- Limited research has examined the role of emotional distress on pain outcomes within a social context.
- Most studies have focused on the direct relationship between social support and pain, largely overlooking the process by which social support has a positive influence on pain outcomes.
- Most studies on social support and emotional distress among individuals with chronic pain are cross-sectional, but prospective, longitudinal studies could offer insight into a process by which social support confers protective benefits in the context of chronic pain.
- The burden of chronic pain is disproportionately experienced by members of different demographic groups. Studies exploring gender, racial/ethnic, and age differences in emotional distress and social support are needed to identify individuals most at-risk for poor pain outcomes.
- Group-based interventions are effective for improving emotional distress and pain outcomes, but the process by which these interventions improve pain remains largely understudied. As these interventions reduce emotional distress, it is plausible that this contributes to improvements in pain.
- Most group-based interventional studies are demographically skewed, so it is unclear how the efficacy of these interventions generalizes to other groups of individuals.
- Randomized controlled trials investigating the process that explains the efficacy of group-based interventions, as well as identifying for who these interventions may work best, are needed to inform the development and implementation of personalized intervention strategies.

investigating the means by which group-based interventions effectively reduce pain, it is important to identify for whom these interventions may work best to avoid employing interventions that are not suitable for a subgroup of individuals. Personalized treatment approaches, whereby prevention and intervention strategies are tailored based on the individual/population of interest, are necessary to improve chronic pain disparities.

Conclusion

Psychological and social factors contribute to the development and maintenance of chronic pain, yet research investigating chronic pain and emotional distress within a social context is limited. This narrative review synthesized research on the interconnections between social support, emotional distress, and chronic pain (see [Box 1](#)), and demonstrated that more research in this area is needed to fully elucidate these relationships. For example, while there is likely a bidirectional relationship between support, emotional distress, and pain, prospective, longitudinal studies are necessary to determine potential temporal precedence and causation. Additionally, it is important that future studies investigate the distinct nuances in the measurement of social support to identify which aspects of support may be most beneficial, and for whom, to inform intervention targets.

While studies have demonstrated that the burden of chronic pain is disproportionately experienced by women, racial/ethnic minorities, and older adults, limited work has focused on how these groups may differentially experience emotional distress within a social context, which may subsequently influence their experience of pain. Although evidence for the use of group-based interventions suggests significant improvements in pain and emotional distress, the process underlying the efficacy of these interventions remains largely unknown. Future RCTs should aim to elucidate the process by which these interventions lead to improvements in pain to inform potential refinements of strategies. Further, it is critical that future RCTs include demographically diverse samples to better understand who may benefit most and to tailor strategies appropriately for the population of interest. Lastly, it is important to note that this was a narrative review of the scholarly literature, and systematic or meta-analytic reviews might reveal additional insights not discussed in this review.

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